

CLEAN VERSION OF CLAIMS

29. A weight bearing element comprising:
a substantially open and flat web having a plurality of spaced stabilizing members; and
at least one chord defining a perimeter having a polygonal cross-sectional shape with at
least 5 mutually non-coplanar sides, at least two of which are substantially
parallel to the web, the chord being connected to the web at least one vertex of an
angle of the chord.
30. The weight bearing element of claim 29 wherein the stabilizing members are formed
from punched out openings.
31. The weight bearing element of claim 29 wherein the stabilizing members are flanges.
32. The weight bearing element of claim 31 wherein sets of the flanges are arranged in
trapezoidal patterns.
33. The weight bearing element of claim 31 formed by roll forming a single sheet of material
into the web and at least one chord.
34. The weight bearing element of claim 31 wherein the chord is fabricated from a single
continuous sheet.
35. The weight bearing element of claim 29 formed by roll forming a single sheet of material
into the web and at least one chord.
36. The weight bearing element of claim 29 wherein the chord is fabricated from a single
continuous sheet.
37. The weight bearing element of claim 29 wherein the cross section of the at least one
chord, excluding any portion in parallel with and connected to the web, has a shape of a
regular or irregular pentagon.

38. The weight bearing element of claim 29 further comprising a fill material in the cavity of at least one of the at least one chord.

39. The weight bearing element of claim 31 wherein the at least one chord consists of two substantially parallel chords coupled to opposite sides of the web.

40. The weight bearing element of claim 39 wherein the chord further comprises at least 5 planar sides, each side corresponding to one side of the closed multi-sided figure of the cross-sectional shape of the chord.

41. The weight bearing element of claim 40 wherein the number of sides is at least 6.

42. The weight bearing element of claim 31 wherein the chord has a height and a width, such that the height is greater than the width.

43. A weight bearing element comprising:
an elongated back connected to two legs;
the back including a plurality of pairs of tabs spaced apart at a standard joist spacing;
each of the plurality of pairs of tabs comprising an upper tab spaced apart from a lower tab;
the back further including a plurality of stiffening members, each of which is positioned between an adjacent set of the pairs of tabs, and each of which comprises a cutout with a plurality of reinforced sides.

44. The weight bearing element of claim 43 wherein the back is continuous with the two legs, forming an elongated "C" shape.

45. The weight bearing element of claim 43 wherein the back is at least 8.5 inches high.

46. The weight bearing element of claim 43 wherein the standard joist spacing is an integer multiple of 8 inches.

47. The weight bearing element of claim 43 wherein the upper tab and the lower tab of at least one of the pairs of tabs is spaced apart by at least 8.5 inches.

D 48. The weight bearing element of claim 43 wherein the standard joist spacing is 8 inches.

C 49. The weight bearing element of claim 43 wherein the cutout has a diamond shape.

50. The weight bearing element of claim 52 wherein diamond shape has four sides, two approximately equal angles of no more than 45 degrees, and two approximately equal angles of no more than 135 degrees.

51. The weight bearing element of claim 43 wherein the reinforced sides comprise punched out portions of the back.

52. The weight bearing element of claim 43 wherein the back and two legs comprise a "C" shape, the back is at least 8.5 inches high, the standard joist spacing is an integer multiple of 8 inches, and the cutout has a diamond shape.

53. The weight bearing element of claim 43 wherein the back and legs comprise a rim band.

54. A building containing the weight bearing element according to claim 29 as a structural component.

55. A building containing the weight bearing element according to claim 43 as a structural component.

56. A building containing the weight bearing element according to claim 29 as a structural component and a weight bearing element of claim 43 as a structural component.